

**To:** Card, Joan[Card.Joan@epa.gov]; McKean, Deborah[mckean.deborah@epa.gov]; Hestmark, Martin[Hestmark.Martin@epa.gov]  
**Cc:** Cristiano, Gina[Cristiano.Gina@epa.gov]; Smith, Paula[Smith.Paula@epa.gov]; McClain-Vanderpool, Lisa[Mcclain-Vanderpool.Lisa@epa.gov]  
**From:** McComb, Martin  
**Sent:** Fri 8/7/2015 10:46:54 PM  
**Subject:** RE: New version of pH description

Date is yesterday, August 6, 2015.

**From:** Card, Joan  
**Sent:** Friday, August 07, 2015 4:45 PM  
**To:** McKean, Deborah; Hestmark, Martin  
**Cc:** Cristiano, Gina; McComb, Martin; Smith, Paula; McClain-Vanderpool, Lisa  
**Subject:** RE: New version of pH description

Thank you. I'm going to add the following to the beginning of the statement. Is it correct?: The following is an summary of the evaluation of pH data collected as of \_[what date?]. Additional information related to additional data, including metals, is being developed and will be provided in a separate statement.

**From:** McKean, Deborah  
**Sent:** Friday, August 07, 2015 4:39 PM  
**To:** Hestmark, Martin; Card, Joan  
**Cc:** Cristiano, Gina; McComb, Martin  
**Subject:** New version of pH description

pH (a measure of acidity) was measured at a number of locations along Cement Creek and the Animas River to Durango and beyond to Farmington, New Mexico. Except for locations within Cement Creek, generally, pH levels were measured before the arrival of the contaminant plumb and found to range between 6.5 and 7.6. When the contaminated water from the mine rupture passed a sampling location, the pH lowered (indicating more acid) to approximately 4.8 (below Silverton). A pH of 4.5 is consistent with the pH of a liquid like black coffee. Later, however, in locations down river, the pH began to return to pre-incident levels. Water acidity levels in the Animas above Cement Creek have been consistent over the past two days at approximately 6.4 to 6.8. The pH of saliva is roughly 6 and the pH of pure water is 7. The acidity level in Cement

Creek has remained low at 3.74 since the mine rupture. Tomato juice and apples also have a pH of approximately 3.74.

## pH of Common Substances

ACIDIC						NEUTRAL	ALKALINE OR BASIC							
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Battery Acid														
	Stomach Acid (Hydrochloric)													
		Lemon Juice, Vinegar												
		Coke and Pepsi												
		Grapefruit and Orange Juice												
		Apples, Dr. Pepper Soda												
		Tomato Juice, Beer												
		Acid Rain, 7-UP Soda												
		Black Coffee, Pepto Bismol												
		Healthy Skin, Hair and Nails												
		Urine, Saliva, Milk												
							"Pure" Water, Blood							
							Shampoos (7.0 to 10.0)							
							Baking Soda, Seawater, Eggs							
							Perm Solutions (8.5 to 9.5)							
							Toothpaste, Hand Soap							
										Milk of Magnesia, Mild Detergent				
										Household Ammonia and Cleaners				
										Soapy Water				
										Hair Straighteners (11.5 to 14.0)				
													Bleach, Oven Cleaner	
													Liquid Drain Cleaner, Caustic Soda	

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